

Pothole Resolution Update: Pothole & Street Maintenance Strategy



Transportation, Infrastructure and Operations Committee: February 26, 2020

Resolution No. 200114



CITY OF KANSAS CITY, MISSOURI
Public Works Department

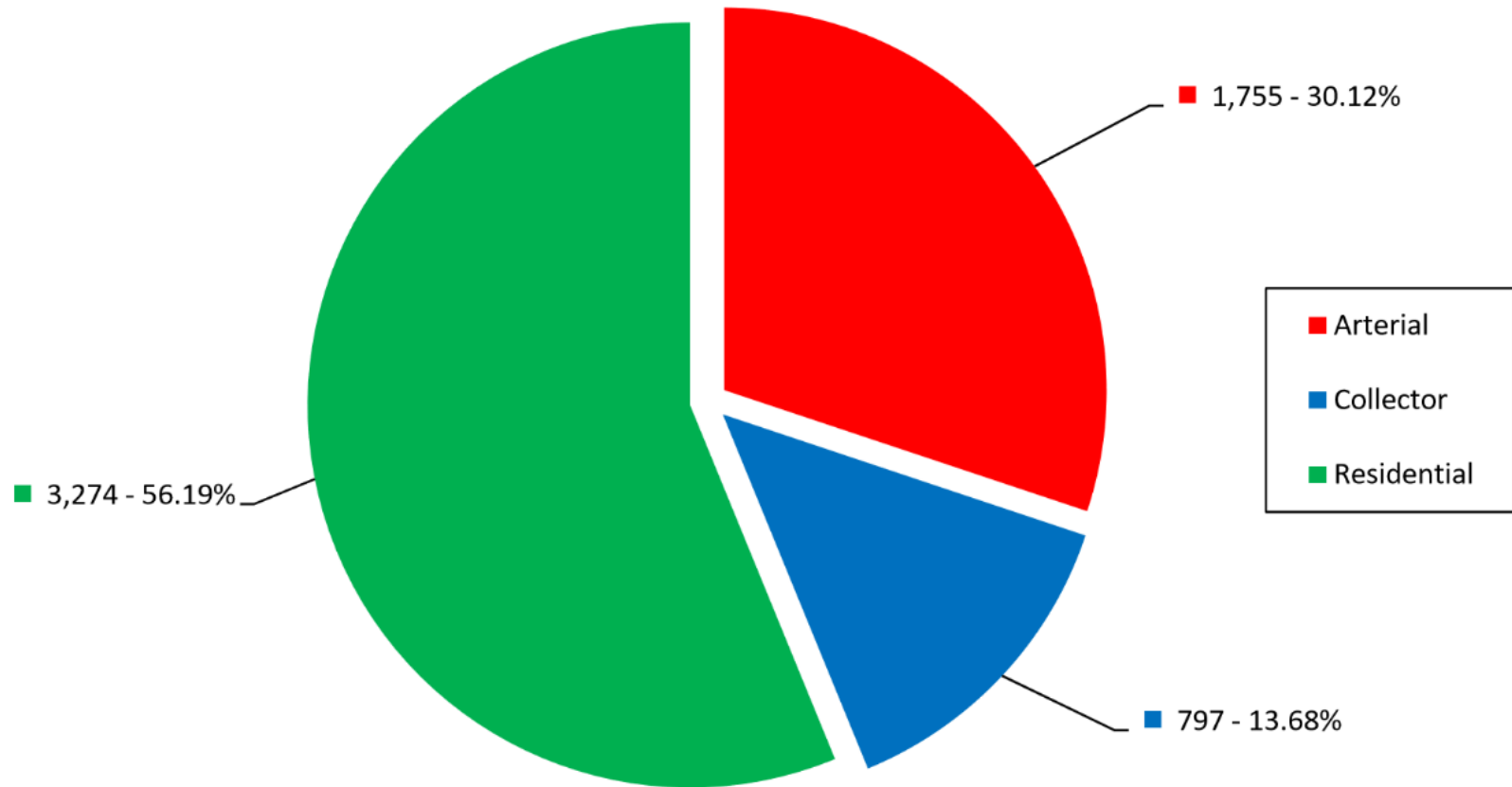


A Quick Background

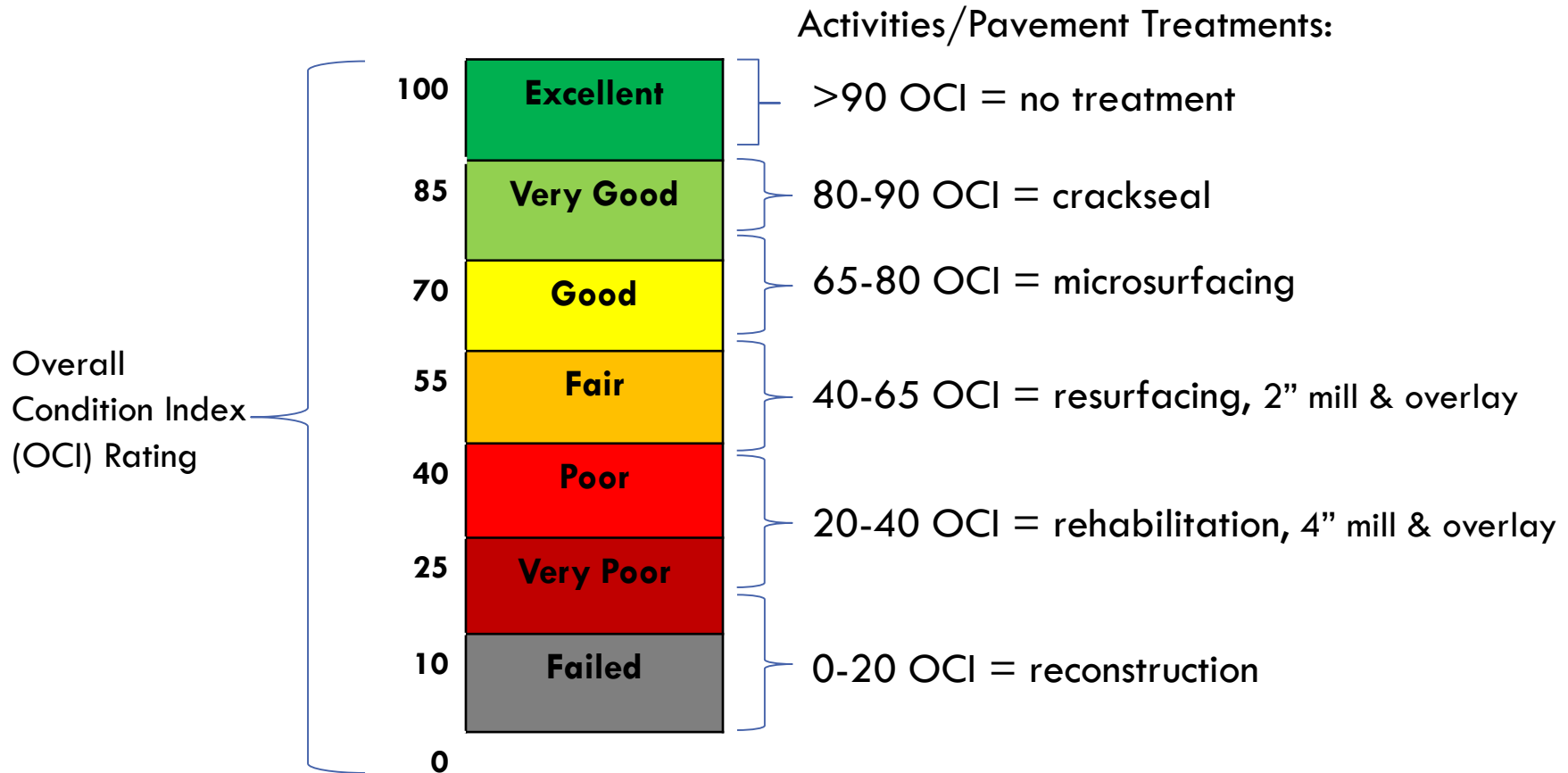
- Types of roads in KCMO
- Condition rating system
- KCMO's current rating
- Pothole Lifecycle
- Cost of maintenance activities



Lane Miles of Pavement per Classification



Street Condition Rating System

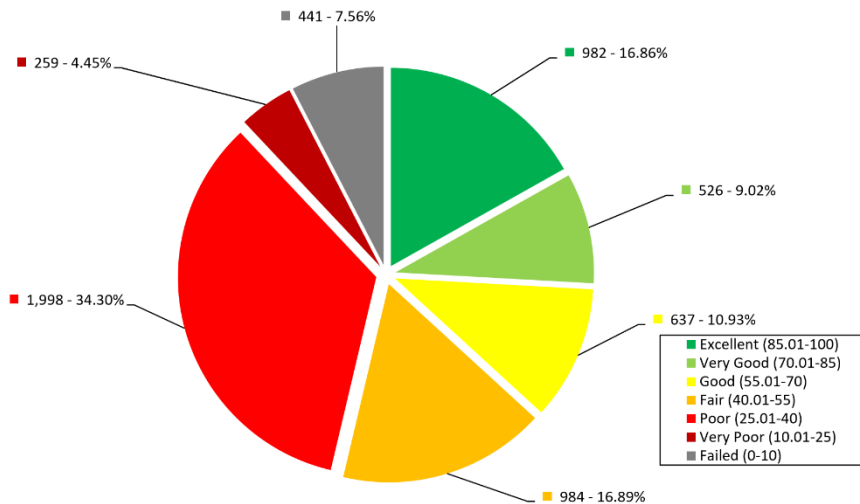


OCI Rating by Lane Miles

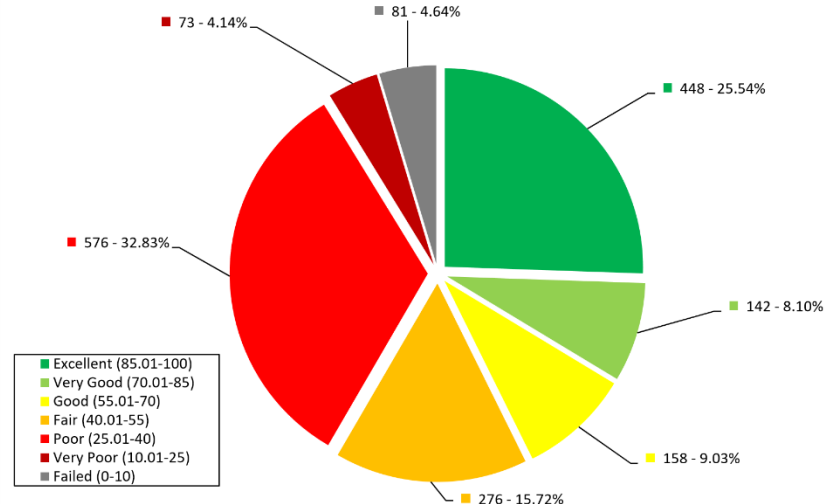
System Network

Arterials-Only

Network Lane Miles of Pavement per Rating Threshold



Arterial Lane Miles of Pavement per Rating Threshold



Network OCI: 51

Arterial OCI: 55

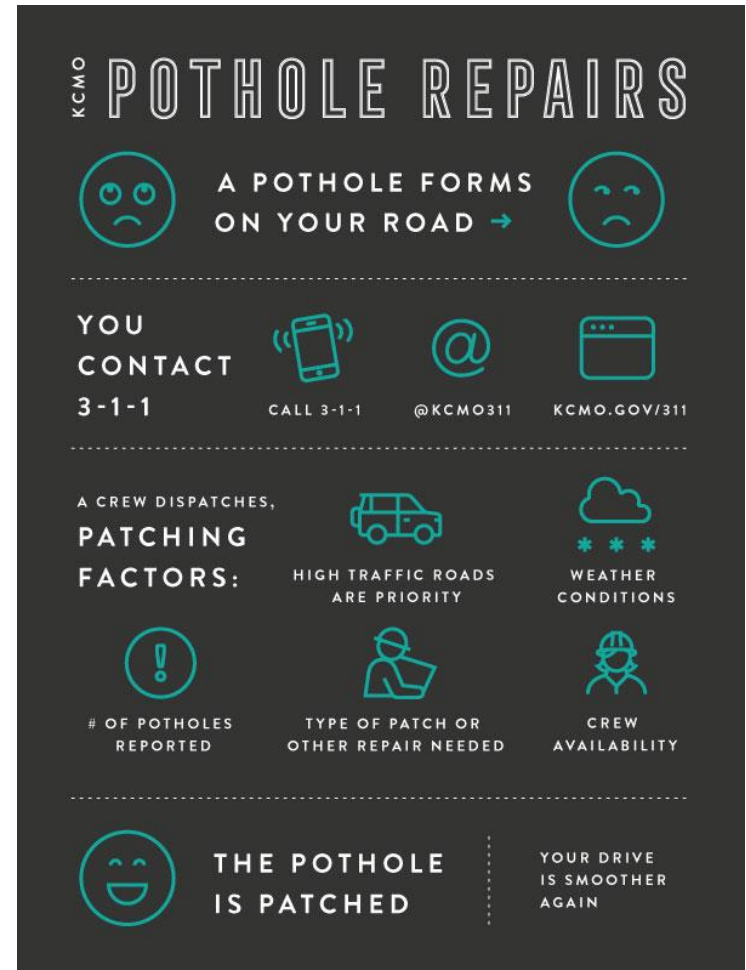
The number of roads in good or better condition decreased 2% from Q1 2019 to Q3 2019.



Pothole Lifecycle

What causes a pothole to form?

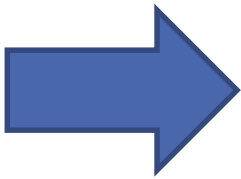
1. Freeze/thaw cycles and wet conditions from rain, ice and snow cause potholes.
2. Water seeps into cracks, freezes with cold temps, and the pavement expands causing potholes to form.
3. Each freeze/thaw cycle makes holes bigger with expansion and results in reoccurring potholes.



Pothole Lifecycle

Is it worse this year?

- Pothole formation is cyclical—we've had similar experiences in the past.
- BUT, we are seeing more potholes than in the last few years.



Why?

- **Roadway lifespan:** many roads hit their recommended life span and are experiencing distress/deterioration
- **Deferred maintenance** because of inadequate funding means preventative maintenance like sealing cracks and microsurfacing can't be done at the needed levels
- **Weather:** The last two winters experienced “typical Missouri winter weather” compared to previously mild winters



Pothole 311 Requests Volume by Calendar Year

Service requests reporting potholes by calendar year

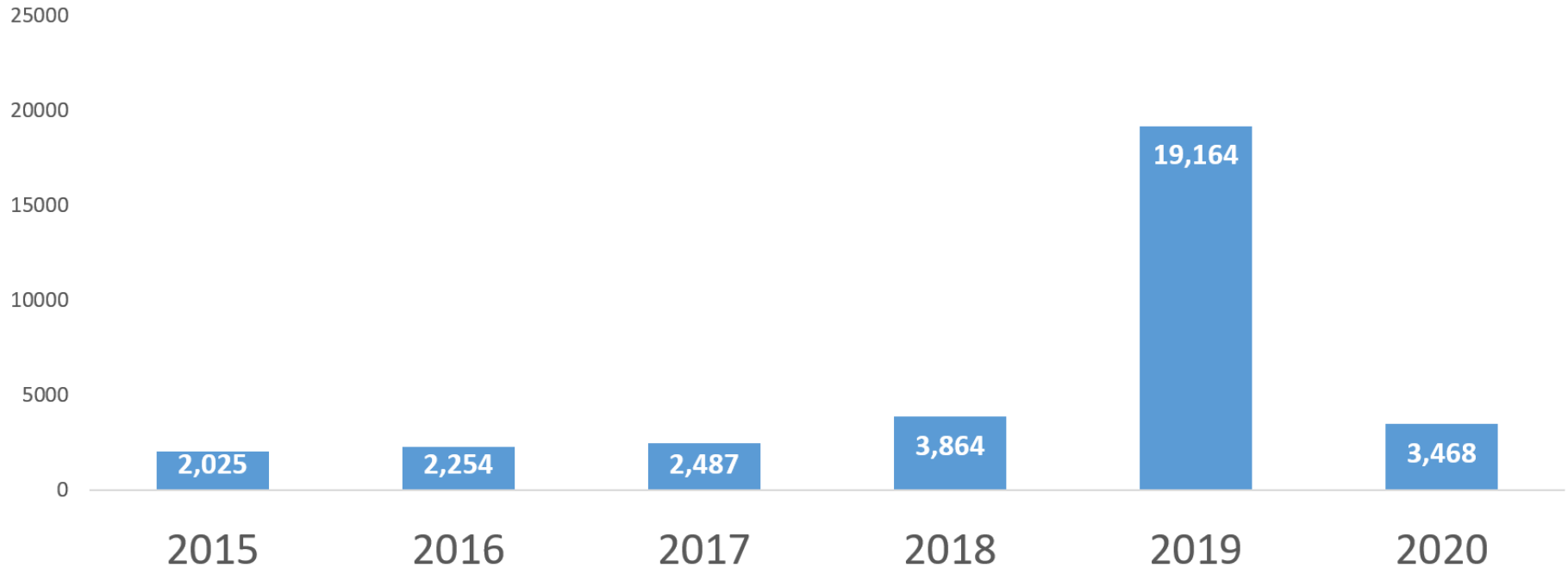


Chart can also be found at: <https://data.kcmo.org/d/ujza-f4vr>



Average Street Maintenance Costs

Activity Type	Cost per mile	Notes
Street Reconstruction	\$1.5 million	Major capital roadway project. Example funding sources: GO Bonds, PIAC, TIFs, federal funding Average lifespan: 20
4" mill and overlay	\$155,000	Activity supported by annual Street Preservation Program. Funding sources: capital improvements fund sales tax, public mass transportation tax Average lifespan: 10-15
2" mill and overlay	\$64,000	Activity supported by annual Street Preservation Program. Funding sources: capital improvements fund sales tax, public mass transportation tax Average lifespan: 8-12 for arterials, 12-16 for residential
Microsurface	\$29,000	Activity supported by annual Street Preservation Program. Funding sources: capital improvements fund sales tax, public mass transportation tax
Cracksealing	\$16,000	Activity supported by district maintenance facilities. Funding sources: motor fuel fund
KCMO Pothole crew cost	\$1,600/day	Activity supported by district maintenance facilities. Funding sources: motor fuel fund



Current Snapshot: Street Maintenance

- 3 maintenance district facilities
- 10-12 crews city-wide
 - (40-45 people)
- Deploying additional contract resources this winter
- 10 specialized asphalt trucks
- 3 asphalt trailers
- Closeout time: All potholes reported to 311 are on a maintenance list.
When pothole volumes are high crews focus patching efforts on major roadways, high call areas and streets that are not passable.



- \$425,000 spent on asphalt to date (annual budget: \$300,000)
- Cost per KCMO crew: roughly \$8,000/week



Current Snapshot:

Street Preservation Program FY 19-20

Program	Current Budget
Street Preservation	\$17M/year
	\$16M street resurfacing
	\$500K for Parks roadways
	\$500K for Complete Streets

5 year plan:

- Focused on arterial roadways
- Goal: reach an arterial rating of 60



<http://kcmo.gov/streetpreservation>

- Budget is 60% higher than FY 2018-2019
- \$11.7M spent so far this season

→ ends April 31, 2020

Remaining amount to be spent as follows:

- \$2.45M remaining in current contracts
- \$150,000 on contractual pothole patching
- Remaining funds bid out on View High Drive, Raytown Road, and 109th St.



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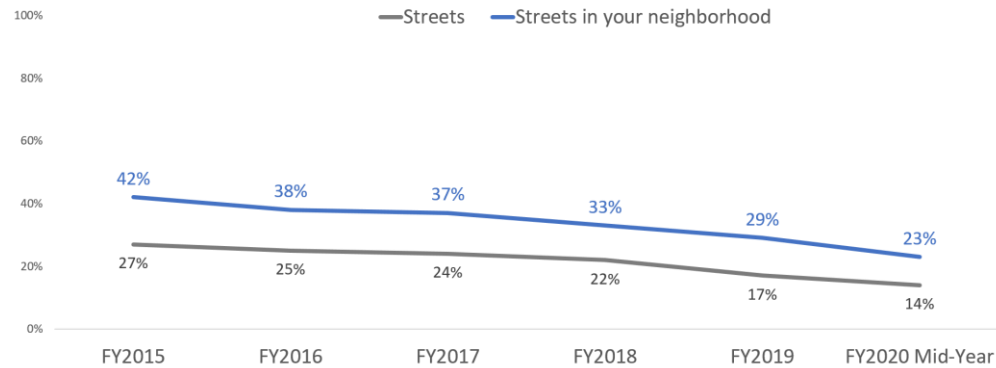
Continually Improving

- KCMO maintenance districts rent mill and paving equipment and a flexible techcrete machine to perform large street patches and seal curbing to supplement the resurfacing program.
 - NW 68th Street, NW Barry Road
 - This maintenance work reduces pothole recurrence
- Street maintenance crews cracksealed 116,000 linear feet in 2019
- Purchased 3 pull-behind asphalt trailers in 2019 to better maneuver patching efforts in residential neighborhoods and add patching capacity
- 2019-2020 Microsurfacing contract was record size: \$1.8M, which includes 70 lane miles (52 lane miles completed to date)
- Test out innovative patching materials:
 - Higher quality cold mix material
 - Thump pads as temporary patch
- Future: hiring a contract person to work with Street Maintenance to get operations up and running in Asset Management System— Cartegraph



Challenges Identified

- Citizen surveys continue to show infrastructure is a priority
- Deferred maintenance backlog
- Volume of potholes
- Staffing vacancies
- Budget constraints
- Actual budget: (\$17M)
- Versus identified need: (\$45+M to maintain existing system at current level)
- Weather and temperature impacts on pothole patching



Resident satisfaction with street maintenance: citywide and in your neighborhood



Community Engagement Strategy

Existing Efforts:

- Pothole FAQ Sheet
- KCMO.gov/potholes
 - Pothole tracker map on Open Data
- Outreach and updates at existing community meetings
- Media Outreach
- Pothole Bot via 311 (live on 2/21)
 - 63 calls in first weekend

Future Efforts:

- myKCMO app
- Weekly updates via website and social media— tracking where crews are working



Curious or frustrated about potholes in KCMO? We hear you! Here are some answers, covering the costs and challenges of patching potholes and repairing our streets.

Why do potholes form?

Freeze/thaw cycles and wet conditions from rain, ice and snow cause potholes. Water seeps into cracks, freezes with cold temps, and the pavement expands causing potholes to form. Each freeze/thaw cycle makes holes bigger with expansion and results in reoccurring potholes.

Are potholes worse this year than previously?

There are roughly 33% more potholes reported to 311 in 2020 compared to the same time period last year.

Can't we just permanently repair our roads?

We care for the pavement in many ways. Weather, temperature and budget determine what tool we use at what time.

- Roadway reconstructions through major capital projects
- Street resurfacing through our annual Street Preservation program (a warm weather activity—late spring through late fall)
- Cracksealing cracks in the roads (a late fall activity)
- And pothole patching (a year-round activity supported by our maintenance and operations division)

How do you prioritize pothole repair?

All potholes reported to 311 are on a maintenance list for repair. When pothole volumes are high, crews focus patching efforts on major roadways, high call areas, and streets that are not passable.

What will solve the pothole problem?

The more roads we can resurface, reconstruct, and perform timely maintenance on, the more potholes will be prevented. This is dependent on budget, strategic use of staffing and resources, and coordination of activities.

My vehicle was damaged from a pothole, is the City responsible?

If you experienced property damage on City streets, you can file a claim for damages with the City. Visit: KCMO.gov and search for "claims"

For more info or to track progress, visit:

KCMO.GOV/POTHOLES



New or reopened pothole?

Report it to 311: KCMO.GOV/311

KCMO Public Works is equipped with:

- 3 maintenance districts that perform regular maintenance activities throughout the year
- 10 large asphalt trucks
- 3 asphalt trailers
- 10-12 potholes crews city-wide
- \$425,000 spent on asphalt for 2019-2020
- \$17M budget for the Street Preservation program in 2019-2020
 - \$16M for street resurfacing efforts
 - \$500K for Parks roadways
 - \$500K for Complete Streets

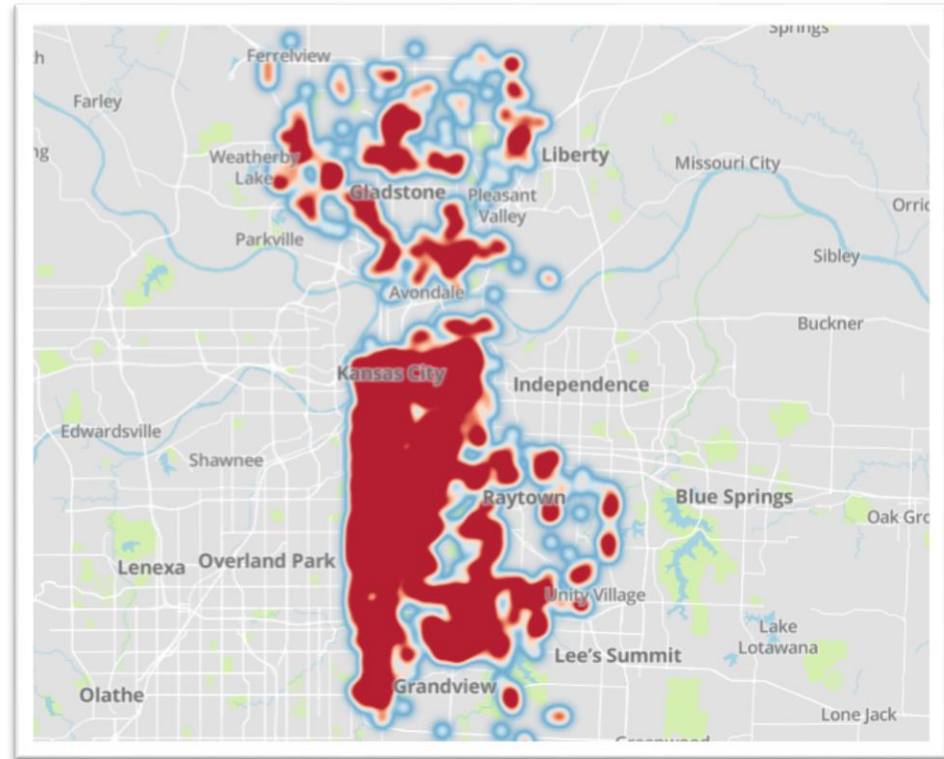


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Using Data & Technology

- myKCMO app
- [311 System](#) and Cartegraph Asset Management coordination



Pothole heat map: 311 Requests in Open Data



Opportunities & Improvements for Moving Forward: Short Term

- Flexing crews to address emergency need
- Changing to 10 hour shifts and weekends
- Pothole blitz to catch up and address immediate challenge
- Declaration of pothole emergency for mandatory overtime staffing
- Pothole Recovery Month: contract crews in all council districts for the month of March



Opportunities & Improvements for Moving Forward: Long Term

Street Maintenance

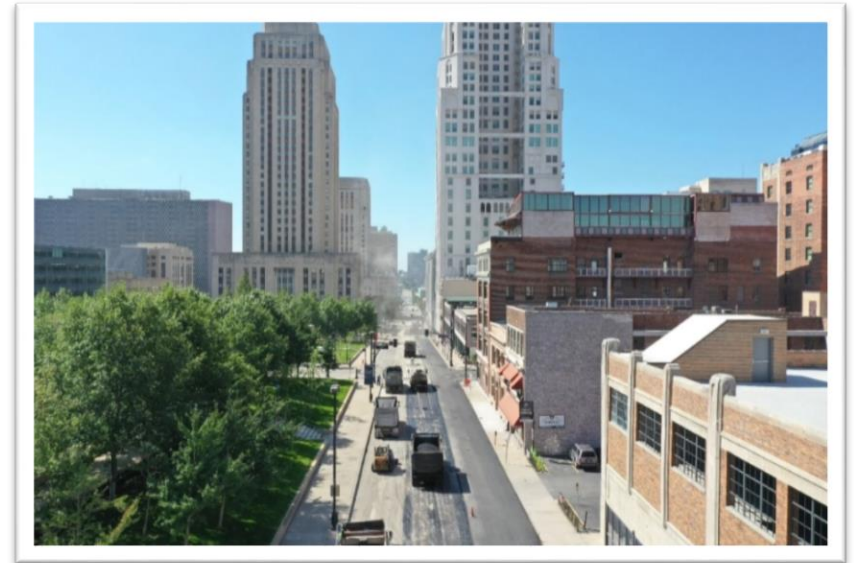
- Work toward zero vacancies in street maintenance
 - Hiring fair summer 2020

Street Preservation

- Milling and overlaying according to OCI/potholes/maintenance concerns
- More strategic use of resources for street preservation activities
- Better utilize 311 data in coordination with asset management system
- Changing standards to better help life of pavements: applying right activity at right time (sealing joints)

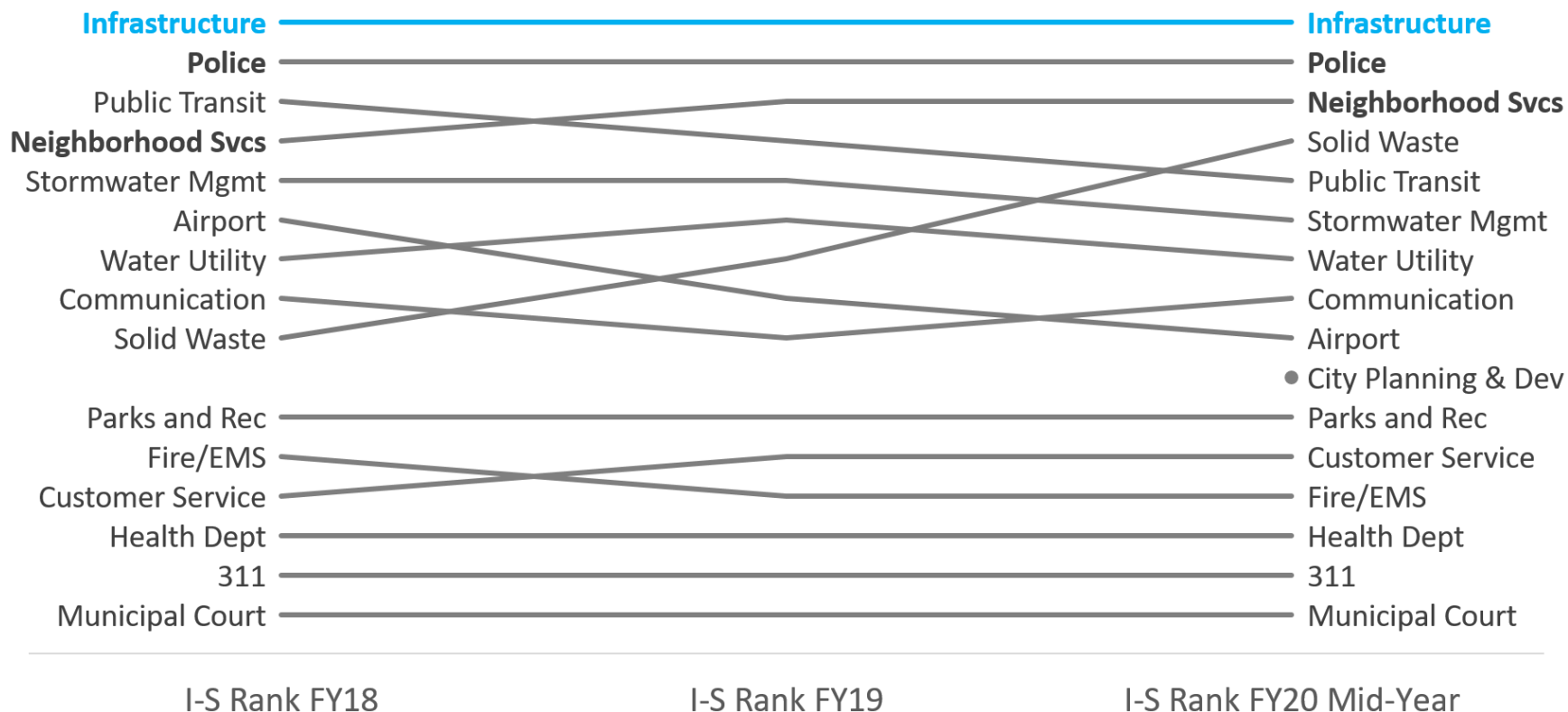
Reconstructions and Major Rehab

- Focus GO Bond projects on reconstructing existing infrastructure, reducing pavement liability and addressing failed roadways per the asset management system.



Importance-Satisfaction (Resident Priorities) are Shifting in other areas, but Infrastructure remains the #1 priority for improvement

- Infrastructure has been the #1 priority for improvement as long as the city has been conducting a randomized, valid resident survey (since 2000)



Street Maintenance Emergency Proposal

Immediate Actions:

1. Declaration of pothole emergency for mandatory overtime staffing
2. \$1.2M to provide contract crews in all council districts for the month of March: “Pothole Recovery Month”
3. Overtime for staff for the month of March

Fiscal Year 2020-2021 Budget:

- Incrementally increase funding for street preservation activities
 - A minimum of \$5M increase to the resurfacing program for FY 2020-2021

Longer term:

- \$10M increase per year until overall system rating reaches 70



Questions?



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